

# *The Gardenette*

—OR—

CITY BACK YARD GARDEN  
BY THE SANDWICH SYSTEM



BENJ. F. ALBAUGH



# *THE GARDENETTE*

— OR —

*CITY BACK YARD GARDEN*

— BY —

The Sandwich System



A Complete Guide

— FOR —

The Amateur Gardener

— BY —

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Covington, Ohio



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# THE GARDENETTE

OR

## The City Back Yard Garden.

**T**HIS LITTLE VOLUME is not designed as a guide to those who have large areas to cultivate, nor is it intended for the use of professional marker gardeners, but is arranged to meet the needs of the beginner, or amateur, and especially for those who have limited areas that are available for this purpose.

Few persons realize the possibilities of the small piece of ground represented by the back-yard of the ordinary city lot—that part which is not occupied by buildings. Too often this part of the yard is made the depository of garbage and useless trash of all kinds.

Such accumulations are unsightly and unsanitary.

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This waste ground could be made to produce enough vegetables of all kinds, to supply several families.

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The Sandwich System, herein described, is not an idle theory, but a solid, successful fact, the result of five years careful, painstaking experiments, and highly successful efforts in practical vegetable growing.

This peculiar method was first suggested by noticing the marvelous

growth of weeds, etc., about the base of an old, decaying strawheap, where some stable manure had been dumped on a thin layer of straw. On this more straw was scratched down by poultry. Lastly on top a few wagon-loads of street scrapings, containing weed seeds were dumped. With this hint for a beginning, the marvelously successful Sandwich bed was elaborated.

The surpassing vigor of growth, the earliness, large size, and superior quality of the products grown by this method, make gardening a very fascinating employment, for it cannot be denied that the ability to greatly surpass "The Other Fellow", gives especial gratification to those engaged in this line of work.

Where the space is limited, only a few articles should be attempted. It does not require a large area to grow a few fine tomatoes, muskmellons, cauliflower or egg plant. Or a bed of lettuce, spinach, or green onions.

If only one square rod is available, it will pay to have a "Gardenette."





GENERAL REFERENCE TABLE FOR SOWING, ETC.

NAME	DATE OF SOWING		DAYS TO COME UP.	READY TO USE FROM SEED SOWN	DISTANCE TABLE		HOW DEEP TO COVER	QUANTITY OF SEED
	UNDER GLASS	OPEN GROUND			APART IN ROWS	ROWS APART		
Asparagus, Roots		April	.....	2-3 Years	1 foot	2 feet	6 inches	100 for 100 foot row
Beans, Dwarf		May to Aug.	6-10	45 to 75 days	3 inch	2 feet	2 inches	1 qt. for 100 ft. row.
Beans, Pole and Lima		May-June	6-10	65 to 100 days	3 feet	4 feet.	2 inches	1 qt. for 100 ft. hills.
Beets	March	April, Aug.	7-10	60 to 75 days	4 inches	1 foot	2 inches	2 oz. for 100 ft. hills.
Cabbage, Early	Feb.		6-10	100 to 125 days	1 1/2 feet	1 1/2 feet	1 inch	2 1/2 oz. for 100 feet row.
Cabbage, Late		May & June	6-10	120 to 180 days	1 1/2 feet	1 1/2 feet	1 inch	2 1/2 oz. for 100 feet row.
Carrot, Early	March	April	10-15	65 to 85 days	4 inches	1 1/2 feet	1 inch	1 oz. for 100 ft. row.
Carrots, Late		May-June	10-15	100 to 120 days	5 inches	1 1/2 feet	1 inch	1 oz. for 100 ft. row.
Canflower, Early	February	April	6-10	100 to 115 days	1 1/2 feet	1 1/2 feet	1 inch	1 oz. for 100 ft. row.
Canflower, Late		May, June	6-10	100 to 135 days	1 1/2 feet	1 1/2 feet	1 inch	1 oz. for 100 ft. row.
Celery, Seed	March	April	12-20	125 to 150 days	3 inch	3 inches	1 inch	2 oz. for 100 ft. row.
Celery, Plants		May, June	.....		5 inches	5 inches	.....	2 oz. for 100 ft. of row.
Corn, Sugar		May, July	8-10	60 to 100 days	2 inches	2 feet	2 inches	1 pt. for 100 ft. row.
Cucumber		May, July	6-8	60 to 85 days	4 feet	4 feet	1 inch	1 oz. for 60 hills.
Egg Plant	March		10-14	125 to 160 days	2 inches	3 inches	1 inch	1 oz. for 100 foot row.
Endive	February	April, Aug.	6-10	75 to 100 days	1 foot	1 foot	1 inch	1 oz. for 100 ft. row.
Kohl Rabi		April, July	6-8	85 days	8 inches	1 foot	1 inch	1 oz. for 100 ft. row.
Lettuce	February	April, Aug.	6-10	65 to 100 days	3 inches	1 foot	1 inch	1 oz. for 100 ft. row.
Melon, Musk		May, June	6-10	90 to 120 days	5 feet	5 feet	1 inch	1 oz. for 60 hills.
Melon, Water		May, June	8-12	100 to 125 days	8 feet	8 feet	2 inches	1 oz. for 30 hills.
Okra		May	6-10	120 to 150 days	2 feet	3 feet	2 inches	1 oz. for 100 ft. row.
Onion, Seed	February	April, May	6-10	80 to 100 days	2 inches	1 1/2 feet	3 inches	1 oz. for 100 ft. row.
Onion, Sets		April, May	.....		2 inches	1 foot	1 inch	4 qts for 100 ft. row.
Parsnips		April	12-18	120 to 150 days	4 inches	1 1/2 feet	3 inches	1 oz. for 100 ft. row.
Parsley		April, May	18-24	90 to 100 days	4 inches	1 foot	1 inch	1 oz. for 100 ft. row.
Peas, Wrinkled		April, July	5-10	50 to 75 days	2 inches	1 foot	2 inches	1 qt. for 100 ft. row.
Peas, Smooth		April, August	5-10	50 to 65 days	2 inches	1 foot	2 inches	1 qt. for 100 ft. row.
Pepper	March		10-14	135 to 150 days	2 feet	2 feet	3 inches	1 oz. to 100 feet of row.
Potatoes	March	April, June	10-25	75 to 100 days	1 foot	1 foot	4 inches	1 peck to 100 ft. of row.
Pumpkins		May, June	6-10	100 to 125 days	6 feet	6 feet	2 inches	1 oz. for 25 hills. <sup>ooo</sup>
Radish	March	April, Sept.	4-6	25 to 50 days	3 inches	1 foot	1 inch	1 oz. for 100 ft. of row.
Salsify		April, May	8-12	125 to 160 days	3 inches	1 foot	1 1/2 inches	1 oz. for 100 ft. of row.
Spinach		April, Sept.	6-12	60 to 75 days	3 inches	1 foot	1 inch	1 oz. for 100 ft. of row.
Squash		May, June	6-10	60 to 120 days	5 feet	5 feet	2 inches	1 oz. for 40 hills.
Tomato, Seeds		May, June	6-12	125 to 150 days	2 inches	3 inches	1 inch	1 1/2 oz. for 100 hills.
Tomato, Staked Plants		May, June	.....		2 feet	2 feet	.....	
Turnip		April, Sept.	4-8	50 to 75 days	6 inches	1 foot	2 inch	1 oz. for 100 ft. of row.

# Flowers on Sandwich Beds.

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The use of Sandwich Beds for growing flowering plants was an after-thought with the author. One season's trial, however, has demonstrated that marvelous results may be thus secured.

The limited space in this little book has prevented the introduction of anything more than the mention, at another place, of a few suggestive examples. The following is a list of the plants experimented with, all of which gave marvelous results, viz.: Pansies, Geraniums, Asters, Sweet peas, Chrysanthemums, Carnations, Phlox, Zinnias, Mignonette, Hybrid Tea Roses, Ricinus, which grew to a height of fifteen feet; Salvias, Marigolds, Alyssum, Dahlias,---blooms 7 to 9 inches in diameter of large blooming varieties---Cannas, Gladiolus, Hyacinths, Tulips, etc., etc.

The single failure was with Nasturtiums. These made a stupenduous growth, vines ten to fifteen feet long, (they were the climbing variety) but the blooms were no better than those grown by ordinary methods.

The chief points of advantage seems to be in the marvelous growth secured, which permits severe pruning, thus securing especially fine specimens.

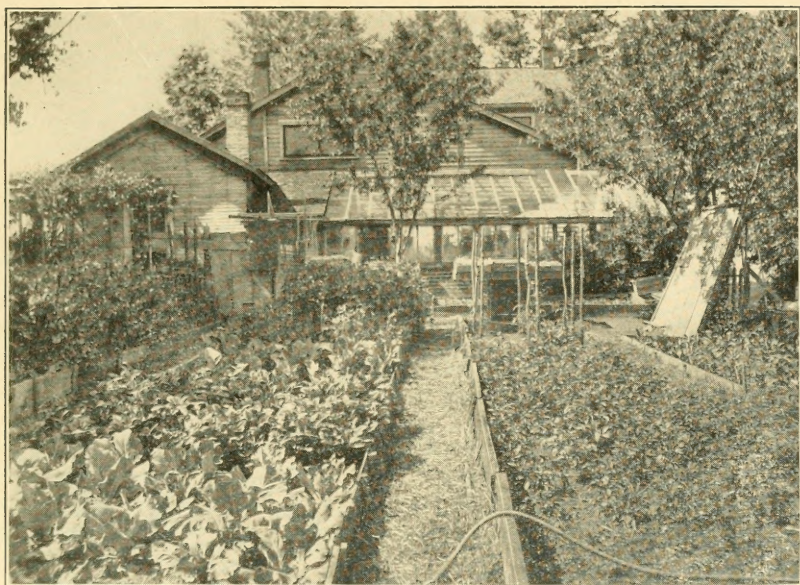
Both kinds of Sandwich beds were used in these experiments, with equal success.

A little reflection will convince any one that these results are, after all, only what can reasonably be expected where all necessary conditions are supplied, viz., Fertility, Aeration of the roots, and Moisture, without Sogginess.

Try a few varieties of your own selection---there is a wide field for choosing ---and you will be delighted with the results obtained.







An Improved Back-yard.

## Space Required.

**T**HREE square rods or a space of ground, say eighteen by forty-five feet, can be made to produce a large part of all the vegetables needed to supply the table of a family of five or six persons throughout the season.

The author has repeatedly produced on such a plot, but containing four square rods about the following:—

- |                             |                           |
|-----------------------------|---------------------------|
| 30 Dozen Green Onions       | 25 Choice Egg Plant,      |
| 1 Bushel Dry Onions         | 25 Extra fine Squashes,   |
| 10 Messes Green Peas,       | 50 Messes Lettuce,        |
| 15 Dozen Beets,             | 10 Messes Endive,         |
| 22 Dozen Radishes,          | 10 Messes Kohl Rabi,      |
| 200 Heads fine Celery,      | 8 Dozen Sugar Corn,       |
| 10 Messes Green Beans       | 50 Extra fine Cantaloups, |
| 25 Heads finest Cauliflower | 200 Pickling Cucumbers,   |
| 25 Heads Cabbage,           | 10 Slicing Cucumbers,     |
| 10 Messes Spinach,          | 5 Bushels Tomatoes,       |
| 10 Messes Chard,            | 5 Bushels Tomaties,       |
| 20 Messes Asparagus,        | 2 Bushels Early Potatoes, |
| 10 Messes Salsify,          | 6 Pints Lima Beans,       |
| 10 Messes Carrots,          | 3 Bushels Turnips,        |
| 10 Messes Parsnips,         | 3 Quarts Okra.            |

At a low estimate these are worth forty dollars; often they would cost much more to buy. But it is not only the market value of the vegetables but *freshness* and *fine quality* that should be considered. Green onions, radishes, green peas, beans, lettuce, spinach, and especially *celery*, rapidly lose their crisp freshness when gathered and exposed for sale days before using.

When grown in home garden they come to the table with all their fine flavor unimpaired.

Then for the business or professional man, who toils all day in office, bank, factory or shop, the change to the light physical labor in the open air, and bright sunshine, gives just the needed change necessary for health, both of body and mind. Such employment will be found restful and soothing to the overtaxed and wearied mind and nerves.

A love for digging in the soil seems inherent. Try it, and you will soon learn to look forward with pleasurable anticipations to the hour before breakfast, in the cool, dewy mornings, and the hour after supper, when the heat of the day is over, that you may spend in the light, delightful work of planting, hoeing and watering.

Watching the growth and development of the plants is a constant source of joy and delight. You forget the cares and worries, and gather new courage for the morrow.

Indeed, Amateur Gardening appeals to most of us in a way that is totally unlike any other employment. The liking for the work seems intuitive; perhaps because it brings us very close to nature; possibly because there seems a lingering memory in the human mind of the Lost Eden. At any rate this desire and taste for gardening is universal, and deserves to be encouraged, for it tends to tranquility of mind, and is conducive both to health and longevity.

### SMALL DETAILS.

The author assumes that the reader is without practical experience or knowledge of gardening. Hence the care in preparing this little guide in describing and explaining even the most trivial details of the work, for Success often depends upon the *Small Matters*, which most authors entirely ignore, forgetting that many successful business men have neither time nor opportunity to master minor details. Then it may be that there are boys, ten to fifteen years old, who can be interested in this very fascinating work during the Summer's vacation. It is certainly an ideal occupation for most boys, as it affords a needed outlet for surplus energy, while the sense of proprietorship, and the self-respect which always accompanies successful, productive endeavor, all aid in the formation of good, industrious habits, and manly character. Give the boy a chance. It is far better than summer excursions to the country in doubtful company.

I would suggest that the family pay to the boy, or girl, a fair price for all the fresh vegetables used, as a just and reasonable recompense for the labor and care involved.

The family gets fresh vegetables at a fair price, and labor receives its just reward. Try it. Encourage the boys and girls in forming habits of industry.

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A Successful Gardner.



# The Sandwich System.

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THE METHOD herein described of growing vegetables of superior earliness and finest quality is new and entirely unique. By it the products of the garden are always *earlier*, and at the same time of better quality than can possibly be produced in any other way. Why is this method superior to other methods?

First: Finest vegetables can be grown on hard, stony, or alkaline soils, where ordinary cultivation would be utterly fruitless. Even where "made" soils consisting mainly of brick-bats and old wall plaster, the Sandwich beds flourish. A solid rock, a paved street, or the tops of flat-roofed buildings could be made into a successful garden by this method.

For best results plants need aeration of the roots. If air cannot penetrate to the roots the plant languishes and dies from suffocation. When surface of ground is covered with water, the plant suffers in same way, and for the same reason. The Sandwich beds can neither be drowned or smothered. The air circulates through the several layers of material, and if too much water is applied, it readily passes through the fibrous beds, and does no harm.



Vegetables on Sandwich Beds—Peas, Spinach, Cauliflower, etc.

Second:—Fertility is placed just where it can easily be absorbed and assimilated by the plants.

Third:—The fibrous nature of the bed causes it to warm up earlier than does the natural soil.

Fourth:—While hydrant water must be supplied as often as needed, in practice it is found that this form of bed does not require as much water as would be supposed, for the decaying mass of fibrous material retains moisture in a way that is surprising.

All kinds of vegetables, and most of flowering plants do wonderfully well on Sandwich beds. Celery, Spinach, Endive, Chard, Egg Plant, Cabbage, Cauliflower, Kohl-rabi, Brussel Sprouts, etc., do exceptionally well. For Peas, Radishes, Carrots, Salsify, Parsnips, etc., where the soil is fairly good, it seems best to first spade the ground, as described in the "Modified Sandwich bed," mixing in manure, and after raking fine and level, make the regular Sandwich bed on top. This is true of those plants that have long, penetrating roots like carrots, etc.

## DIRECTIONS FOR MAKING SANDWICH BEDS.

FIRST:—Place a layer of straw, or stable litter, or leaves from the trees, about five inches deep. Tramp or pack pretty firm and smooth.

SECOND:—Spread over this a layer about one inch deep of rich, fine, stable manure.

THIRD:—On this place another layer of stable litter about two inches thick.

Tramp or pack this down firm. Then turn on the hose and give the mass a thorough soaking, but stop before leaching begins.

FOURTH:—Spread evenly over the bed at least four inches of street scrapings, but avoid streets that have oil or asphalt in their make-up. If street scrapings cannot be readily obtained, use instead, a compost of equal parts of fine river sand, rich garden soil, and old, fine stable manure. Mix by shoveling over in the heap.

After all is in place, tramp till firm, and it is ready to plant.

It sometimes happens that the real Sandwich bed is not possible or practicable; in such cases if the soil is reasonably fertile, and in good condition, the following method may be successfully adopted.

## A MODIFIED SANDWICH BED.

Procure one load of rich, stable manure for each square rod of ground, and have it dumped on or near where the beds are to be made.

With a spading fork, beginning at one end of the bed, spade a furrow across the bed; fill this furrow nearly full of manure, tramp down firm; then spade another furrow, throwing the dirt over the manure. Fill this furrow with manure as before, and again throw the dirt from another line of spading, thus alternately filling furrow and spading, proceed, until the entire bed is spaded.

Then cover the entire surface with street scrapings or compost, as before described, and rake smooth.

After the first year with the Sandwich beds there will be an abundance of compost on hand, as all the body of the bed will be turned into compost of the finest quality.

It should be shoveled into large conical heaps for wintering. After one season's use, before heaping in Autumn, make compost richer by adding a wagon load of stable manure, spreading it on the beds before putting into heaps.

The shoveling into heaps will thoroughly mix the manure through the mass, and leave it in perfect condition for spring use.

There should be a generous supply of compost always on hand, as it will be found to be very valuable for enriching flower beds, etc., It is also just what is needed for plotting plants, and for filling flats for starting early plants, etc.

It usually happens that street scrapings can be had at a small cost if a convenient place for unloading is arranged, as it often saves a long haul to the public dump. And a modest tip to the driver will help. The real value of this material is not generally understood, or appreciated.

## TOOLS AND APPLIANCES.

A steel garden rake, spading fork, small garden trowel, a long handled shovel, and a manure fork are about all the tools that need be purchased.

In addition a "float" is very convenient. This is a board one-half inch thick, ten inches long, and four inches in width. A piece of broom handle, eight inches long, is firmly nailed on end to center of board, using at least four slim, long nails. This implement is used to make the surface of the bed smooth, likewise for firming the soil after seeds are covered. The edge is used to mark off rows, and for covering the seeds.



## BOARD FRAMES.

After the beds are made, the use of frames is desirable. These are made of common, six inch fencing. They should be at least four in number, each twelve feet long, and six feet wide. These are lightly nailed together at corners for convenience, but need not be nailed so firmly as to prevent their being "knocked down" for winter storing.

Before planting, the frames are placed in correct position on top of the bed.

A board six inches wide, and four feet in length should be provided, on which to kneel while planting seeds or transplanting.

Begin at one end of bed and as planting proceeds move backwards until the bed is completed.

The beds may be of any suitable length, and may extend in any direction, but the width should be uniform, and should be constructed a foot wider than the frames. There should be a walk on both sides of the bed, at least two feet wide, for convenience in watering, planting and gathering the crop.

## MUSLIN SCREENS.

For protecting early plants from frosts, and for giving shade to newly set plants, a half dozen muslin screens should be provided.

These are made of inch slats, six and one-half feet long, and exactly three feet wide, with a cross slat in the middle.

Cover the frame with muslin a yard wide, of a quality usually costing about six cents per yard. Begin at one end, using small tacks, stretching the muslin pretty tight. Do not cut in single lengths, but stretch over the end, and thus tack the muslin on both sides. This gives a dead air space between the muslin covers.

These screens are light, cheap, and are nearly as good as glazed sash, at less than one-fourth the cost, and no breakage of glass.

The screens are also useful in giving partial shade to such succulent plants as radishes, lettuce, endive, celery, etc. By protecting these from the heat of the burning sun, greater crispness and brittleness is secured. Used in this way the frames should be supported on stakes two feet above the plants.

If hard frosts threaten, first spread old newspapers over the tender plants, then place the screens on the board frames, and old rugs or carpets may be placed over all. In this way early plants may be safely carried through pretty hard freezing.

## GROUP PLANTING.

It does not seem desirable to have to be engaged *continuously* in planting. And so it happens that there are a number of different kinds of plants which do equally well when planted at the same date, so these have been assembled into groups, and all the work necessary for each group may be done at the same time.

It will be noticed that in "First Planting" there are Peas, Radishes, Beets, Lettuce and Onions. These are semi-hardy, and should be planted early. The plan given need not be rigidly followed, for no two families are exactly the same in their likings. Less or greater quantities of each may be planted, or such things as are not wanted can be omitted entirely. The plans are merely suggestive, and may be varied to suit the taste of the planter.

The varieties of course may be also changed. Those named have been found quite satisfactory, but others may do equally well. These are given as an aid in selecting the seeds that will be needed. Order seeds early, and buy only of reliable seedsmen.

If the available space is very limited, or if the planter has not time to grow such plants as may be need for transplanting, such as Cabbage, Tomato, Cauliflower, Celery, Egg Plants, etc., it is usually cheaper to buy them of a reliable grower. In this case the plants should be ordered in advance, and have them sent at proper date, which the grower understands. When plants are received they should be set out promptly, selecting the evening if possible for the work. By shading with muslin screens for a few days, there should be few failures.

When transplanting dip the roots in a "puddle" made of clay and water, about consistency of cream, and press soil *very firm* around the roots.

After the plants seem established, remove the screens, or the plants will blanch and become tender. Always order a few more plants than are needed in space provided. Set the surplus plants in rich soil, and water and shade them. These can be used later to refill vacant places, for accidents, cut worms, etc., are pretty sure to destroy occasional plants, and vacant places in the garden are unsightly.

## QUICK GERMINATION.

The best success in growing plants depends in large measure upon *quick* and perfect germination.

Seeds of plants are, primarily, a germ, intended to produce a young plant of the same genus. Besides the germ, the seed also consists of a small

packet of Baby Plant Food, containing exactly the elements necessary to furnish the nourishment needed to support the tiny plant, until such time as will enable it to develop roots and leaves, so that it may be able to absorb and assimilate from the soil its own food, through natural means provided for this purpose. If germination is delayed or much retarded by unfavorable conditions, there is danger that this supply of food, contained in the seed, will be spoiled by fermentation, or decay, and the helpless little plant be starved. Even if the plant survives, it remains a stunted weakling, that rarely ever recovers its normal vigor and vitality.

Who has not seen corn fields in exactly this condition, when germination has occupied two or three weeks? Nine times out of ten this spells crop failure.

Try to secure quick germination: *the quicker the better*. The necessary conditions are fertility, warmth, moisture, and aeration. In all these respects the Sandwich beds supply ideal conditions.

Early in the season there is often a lack of sunshine and warmth and, therefore there is more or less trouble with seeds rotting. Nearly all of this can be easily avoided by sprouting the seeds before planting. If the seeds are really worthless, the fact is discovered in time to secure a fresh supply. Plants started this way possess more vigor, are more sturdy and thrifty, and will thrive and do well, when poor, sickly plants would utterly fail. The author uses a home-made machine which does the work admirably.

## THE PLANT INCUBATOR.

This is especially useful when early plants cannot be easily obtained from regular growers, or when special varieties are wanted, and the plants must be grown at home.

The author usually has one to three of these machines in constant use from March to May, for in the latitude of Central Ohio frosts and cold nights make it difficult to grow good, *early* plants.

With this machine, fine, early plants may be had in abundance and great variety, at small cost. With it in the South, plants may be grown all winter, and be ready to transplant at any time desired, regardless of "northers" or sudden cold snaps.

The machines are heated with common kerosene lamps, at a cost, on an average, of two cents for each twenty-four hours. Usually very little fire will be needed, except during cloudy, cold, and windy days, and chilly nights, and by simply lighting the lamps, the plants can be safely carried over spells of unfavorable weather.



## DESCRIPTION.

The Plant Incubator consists of a cubical box, two feet in dimensions each way, with a roomy door on one side. This box forms the lamp chamber. The top is open. A piece of sheet iron, as wide as inside of box, and four inches longer, has two inches turned up at right angles at each end. This sheet iron is tacked to inside of box so that it will be held in place, two inches below the top of the box. The sheet iron receives and distributes the heat from the lamp beneath.

The lamp should be so placed that the top of the chimney is four inches beneath the iron. Cleats are nailed on outside of box, above the door, and



Plant Incubator, Out-of-doors—Cover Removed.

on outside opposite, to support the hot-air chamber, which is made of two boards six feet long, and six inches wide, boarded over the ends and bottom, except where it is slipped over the top of the lamp chamber. This should fit snugly, or there will be much loss of heat. It is best to line the entire inside of both lamp chamber, and hot-air chamber, with cheap asbestos paper. A small hole must be provided near the bottom for ingress of fresh air, or the lamps will not burn well.

Three flats or shallow boxes, four inches deep, and 24 x 26 inches in size, will furnish the cover.

Fill the flats with rich compost, mixed with fine sand, and as soon as the soil becomes mildly warm, they are ready for planting.

The lamps heat the diaphragm of sheet iron above, this in turn imparts its warmth to the hot-air chamber, and penetrates the soil in the flats above.

The flats should have three inches of soil. In this plants will thrive wonderfully.

Each flat will grow one hundred and fifty plants. After the plants are about two inches high, the author usually prepares three more flats, which are placed next to the hot-air chamber, and the flats containing the plants are placed on top, thus warming six flats. During mild, sunny days the upper flats are removed to a sheltered place, through the day, and are returned to their position above the later plantings, during the nights. A frame of twelve inch boards fits outside the flats, and a cover of double muslin screens protects the plants during the nights, or on cold, stormy days. The machine may be placed in a warm room by a window, in an unoccupied room, on a sheltered veranda, or, after cold weather is over, it may be placed in the garden, or out of doors anywhere.

The hot air chamber furnishes ideal conditions for sprouting the seeds in effecting quick germination.

# PLANT INCUBATOR FIRST SOWING. ARRANGEMENT OF VARIETIES.

6 feet	Cabbage	
	Cabbage	75 Plants
	Cabbage	
	Cauliflower	
	Cauliflower	75 Plants
	Cauliflower	
	Egg Plant	
	Egg Plant	75 Plants
	Egg Plant	
	Peppers	
	Peppers	75 Plants
	Peppers	
	Tomato	
	Tomato	75 Plants
	Tomato	
	Celery	
	Celery	75 Plants
	Celery	
		Total 150

26 inches



## SPROUTING SEEDS.

Procure pieces of common, cheap burlap, each twelve by twenty-four inches. Pour the seeds on one end; fold burlap from both sides; roll up and fasten with a pin. Prepare a label giving name, date, etc. Then into a pan containing half a pint of warm, but not hot water, drop three or four drops of Spirits of Camphor. Now place the roll containing the seeds in this water for twenty minutes. Press out lightly, so there will be no dripping; wrap in five or six thicknesses of old newspaper, and place where the temperature is regular, and about  $75^{\circ}$ . The hot air chamber furnishes exactly these conditions. Examine the seeds daily, and if dry, water with luke-warm water.

As soon as germ shows, *plant at once*, or otherwise there is danger of losing the seed. With most of seeds there will be a gain of six to twelve days in time, and the seedlings will possess a surpassing vigor. A fair trial will convince any one of the great merits of this method.



# Post Hole Method.

WITH CUCUMBERS, MELONS, SQUASHES, ETC.

The essentials for growing these vines and fruits in perfection are:

- 1st. Fertility, in available form.
- 2nd. Moisture, without soginess.
- 3rd. SAND!

While all of these vines delight in a sandy soil, both musk and water melons will only reach their greatest perfection in size and quality, where there is much sand in the soil.



A single hill of Squashes—Post Hole Method. Five of the best specimens had been removed before photo was taken.

It is SAND that makes Southern Indiana and Georgia famous for melons.

The poor flavor noticed in these sometimes, is because they are pulled green, and permitted to ripen in transit.

Melons are only at their best when permitted to fully ripen on the vines. This alone gives the honeyed sweetness so much desired.

The Post Hole method is adapted to limited areas, for a few hills can be

made in odd corners and out-of-the-way places, the only condition essential to success being plenty of sunshine.

The soil is neither plowed nor spaded.

### PREPARATION OF THE HILLS.

Dig out a hole size of a wash-tub, and about ten inches deep. In bottom of this dig with a common post auger, or narrow spade, a hole two feet deep, and ten inches in diameter.

Fill this post-hole with coarse stable litter, avoiding saw dust, and pack pretty firm.

Fill the entire excavation with a compost made up of two parts sand, one part of fine, well rotted manure, and one part good garden soil. Mix thoroughly by shoveling over several times. In finishing preserve the bowl-like depression. When completed the "hill" should be about eighteen inches in diameter and six or eight inches above the level.

Several days before planting pour into the depression six to ten gallons of water to furnish a store of moisture. When soil is again dry enough the hill is ready for planting.

Select the choicest varieties, and buy the best seed obtainable. Plant ten seeds in a hill and cover two inches deep.

Nearly a week can be gained by sprouting the seed as described in "Quick Germination."



Cabbage, Corn and Cantaloupes Sandwich Beds, and Post-Hole Method.



For the striped bug place a moth ball or two in a small pan, and, place close to the plants; or sprinkle tobacco dust, a handful to the hill, on the soil before the plants are up; or a lure may be planted say two feet distant, in a circular furrow, using any cheap muskmelon, squash or cucumber seeds, but use no tobacco on these. Permit the bugs to feast on the lure, for they dislike the odor of tobacco, and thus the choice plants in the hill are saved. After danger of bugs is over destroy the lure.

For leaf blight in musk melons, prevention is easier than cure. Get a pound each of Flowers of Sulphur, and dry, air-slaked lime. Mix thoroughly, and sow around the hill for three or four feet, on top of ground after planting. This amount will be enough for a dozen hills. This is intended to destroy the spores of the fungus which causes leaf-blight.

The hills should be at least six feet apart. In planting, cover seeds about two inches deep, and pack soil lightly.

If droughts occur, these hills may easily be watered by pouring water into the bowl-like depression, but first, with a sharpened stick, make several holes down to the litter below. After heavy rains the same precautions are necessary to prevent drowning.

Managed in this way the yield of a few hills is enormous.

The same treatment, except the lime and sulphur, is given to Squashes, Cucumbers, Pumpkins and Water-melons.



¶ The following ten pages show practical diagrams and complete detail description of planting vegetables correctly. : : : :

### PLAN OF FIRST PLANTING.

[illegible]

6 feet



## FIRST PLANTING.

Date of Planting: as early in Spring as ground is dry enough to work—usually about March 25 to April 10th.

This is written for latitude of Columbus, Ohio. Localities of 100 miles northward will be ten days later: same distance southward, ten days earlier. For 200 miles North or South, allow fifteen to twenty days; allowance should be made for elevation and local conditions also. The plants named are all hardy enough to withstand considerable frosts.

**PEAS.** *Varieties:* Early Alaska, Little Gem, Gradus.

*Quantity of Seed:* E. Alaska  $1\frac{1}{2}$  pint: Little Gem  $1\frac{1}{2}$  pint; Gradus 1 pint.

*Distances:* Apart in rows, 2 inches: Rows apart, 12 inches.

*Depth:* two inches.

All these varieties require brush two feet in height.

**RADISHES.** *Varieties:* Icicle, Scarlet Turnip, Scarlet White Tip.

*Quality of Seed:* One packet of each variety.

*Distances:* Rows apart, 12 inches: Apart in rows, 3 inches.

*Depth:* One inch.

**BEETS.** *Varieties:* Eclipse, Ex. Early Egyptian, Early Blood Turnip.

*Distances:* Apart in rows, 4 inches: rows apart, 12 inches.

*Quantity of Seed:* One packet of each variety.

**LETTUCE:** *Varieties:* Grand Rapids, Black Seeded Simpson, Big Boston.

*Quantity of Seed:* One packet of each variety.

*Distances:* Apart in rows, 3 inches: Rows apart, 12 inches.

*Depth:* One inch.

If transplanted, set plants six inches apart each way.

**ONIONS (Sets).** *Varieties:* White, Red, Yellow.

*Distances:* Apart in rows, 2 inches: Rows apart, 6 inches.

*Depth:* Two to three inches. When fit to pull, remove two and leave one. Remove all of alternate rows: the remainder may mature for winter storing.

*Quantity of Seed:* One quart of each variety. Onion Sets should be about size of end of small finger. If much larger they are apt to go to seed: if much smaller they lack vigor.

# PLAN OF SECOND PLANTING.

25 feet

..X.....X...	Cabbage	...X.....X..
..X.....X...	Cabbage	...X.....X..
..X.....X...	Cabbage	...X.....X..
..X.....X...	Cauliflower	..X.....X..
..X.....X...	Cauliflower	..X.....X..
..X.....X...	Cauliflower	..X.....X..
.....	Carrots	.....
.....	Carrots	.....
.....	Carrots	.....
.....	Parsnips	.....
.....	Parsnips	.....
.....	Parsnips	.....
.....	Salsify	.....
.....	Salsify	.....
.....	Salsify	.....
.....	Chard	.....
.....	Chard	.....

6 feet.

## DIRECTIONS FOR SECOND PLANTING.

Date: About April 10 to 20, or about two weeks after time of First Planting.

As these are principally root crops, it is desirable that the soil be spaded before construction of bed. The trenching method will give excellent results.

Where only a few Cabbage and Cauliflower plants are desired, it is cheaper to buy the plants of a reliable grower.

**CABBAGE:** *Varieties:* Early Jersey Wakefield: Late Flat Dutch.

*Number of Plants:* One dozen of each variety.

*Distances:* 18 inches each way. Remove outer leaves. Set deep.

Shade for a week. Heel surplus plants in shady place, and use later to fill vacancies.

**CAULIFLOWER.** *Varieties:* Early Snowball.

*Number of Plants:* One dozen of each variety.

*Distances:* 18 inches each way. Remove outer leaves and set deep: shade for a week. Heel extra plants to fill vacancies.

**CARROTS.** *Varieties:* Chantenay: Early Danvers.

*Quantity of Seed:* One packet of each.

*Distances:* Apart in rows, 4 inches: rows apart, 18 inches.

*Depth:* Half an inch.

**PARSNIPS.** *Varieties:* Hollow Crown.

*Quantity of Seed:* One packet.

*Distances:* Apart in rows, 4 inches; rows apart, 18 inches.

*Depth:* Half an inch.

**SALSIFY.** *Varieties:* Mammoth Sandwich Islands.

*Quantity of Seed:* One packet.

*Distances:* Apart in rows, 3 inches: rows apart, 18 inches.

*Depth.:* One inch.

Sprout seeds of Carrots, Parsnips and Salsify by use of wet burlap cloths. Ten days required for germination. Plant when germ first shows. Parsnips improve by being left in ground till needed in spring. Salsify may be dug as used. It is improved by light frosts. When dug store in sand in cellar. Chard: Varieties, Lucullus. Plant same as Beets. Leaves are uses as Splnach: the stems are prepared like Asparagus.



# PLAN OF THIRD PLANTING.

25 feet

.....	Parsley.....
.....	Parsley.....
.....	Peas.....
.....	Peas.....
.....	Spinach.....
.....	Spinach.....
.....	Peas.....
.....	Peas.....
.....	Spinach.....
.....	Spinach.....
.....	Peas.....
.....	Peas.....
.....	Lettuce.....
.....	Lettuce.....
.....	E. Ohio Potatoes.....
.....	Golden Bantem Corn.....
.....	E. Ohio Potatoes.....
.....	Golden Bantem Corn.....
.....	E. Ohio Potatoes.....
.....	Country Gent. Corn.....
.....	Irish Cobbler Potatoes.....
.....	Country Gent. Corn.....
.....	Irish Cobbler Potatoes.....
.....	Country Gent. Corn.....
.....	Irish Cobbler Potatoes.....

6 feet.

## DIRECTIONS FOR THIRD PLANTING.

Date, April 25 to May 5 or about ten days after "Second Planting." For succession Peas, Lettuce and Radishes may be now planted. Beds may be by "Sandwich" System, or by the trench method.

**PARLSEY.** *Varieties:* Moss Curled.

*Quantity of Seed:* One packet.

*Distances:* Apart in rows, 4 inches: rows apart, one foot.

*Depth:* Half an inch.

Seed should be sprouted by use of wet burlap cloths. Germination will require about two weeks. time. Plant seed quickly when germ first shows.

**PEAS FOR SUCCESSION.** *Varieties:* Gradus, Telephone.

*Quantity of Seed:* Half pint of each variety.

**SPINACH.** *Varieties:* Curled Savoy, Victoria.

*Quantity of seed:* Half oz. of each variety.

*Distances:* Apart in rows, 3 inches. Rows apart, one foot.

*Depth:* One inch. Sow seeds one inch apart: thin when up.

**LETTUCE FOR SUCCESSION.** See Lettuce in "First Planting."

**POTATOES.** *Varieties:* E. Ohio, Irish Cobbler.

*Quantity of Seed:*  $\frac{1}{4}$  peck of each variety.

*Distances:* Apart in rows, one foot: rows apart, two feet.

*Depth:* Four inches. Select medium sized potatoes for seed. Cut in halves lengthwise. Start these in sand in shallow boxes, by placing in cellar or moderately warm room four weeks before planting. Sprouts should be about one inch above ground when planted out. By this method two weeks time is gained.

**SUGAR CORN.** *Varieties:* Golden Bantam.

*Quantity of Seed:* One packet of each variety.

*Distances:* Apart in rows 2 inches: rows apart, 2 feet.

*Depth:* Two inches. When three inches high thin to 8 inches apart in row. The potatoes are usually dug and out of way in time for corn to mature.

# PLAN OF FOURTH PLANTING

25 feet

X	X	Egg Plant	X	X
X	X	Egg Plant	X	X
X	X	Egg Plant	X	X
O	O	Okra	O	O
O	O	Okra	O	O
O	O	Okra	O	O
		Bush Tender Pod Beans		
		Bush Tender Pod Beans		
		Bush Tender Pod Beans		
		Bush Tender Pod Beans		
		Bush Tender Pod Beans		
		Bush Lima Beans		
		Bush Lima Beans		
		Bush Lima Beans		
		Bush Lima Beans		
		Bush Lima Beans		
		Bush Lima Beans		

6 feet.



## DIRECTIONS FOR FOURTH PLANTING.

Use either "Sandwich" or "Trenching" System.

EGG PLANT. *Varieties:* Black Beauty, Mammoth Purple.

*Distances:* 18 inches each way.

Set rather deep and firm.

*Number Plants:* One dozen.

OKRA. *Varieties:* White Velvet, Perkins Mammoth.

*Quantity of Seed:* Half oz. each variety.

*Distances:* Apart in rows, 4 inches: rows apart, 18 inches.

*Depth:* Two inches.

When plants are 3 inches high, thin to 1 foot apart.

BEANS, TENDER POD BUSH.

*Varieties:* Hardy Wax, Yellow Pencil Pod.

*Quantity of Seed:* Half Pint each variety.

*Distances:* Apart in rows, 3 inches: rows apart, 18 inches.

*Depth:* 2 inches.

LIMA BEANS BUSH.

*Varieties:* Henderson's E. Giant, Fordhook.

*Quantity of Seed:* Half pint of each variety.

*Distances:* Apart in rows, 2 inches: rows apart, 18 inches.

*Depth:* One and one-half inches.

If Lima Beans are planted with the eye downward they will germinate sooner. The beans should be pressed firmly in place before covering.

# SUCCESSION TO FIRST PLANTING.

	Peas		
T	Peas	T	T
	Radish		
	Radish		
T	Peas	T	T
	Peas		
	Beets		
T	Beets	T	T
	Peas		
	Peas		
T	Lettuce	T	T
	Lettuce		
	Peas		
T	Peas	T	T
	Lettuce		
	Lettuce		
T	Peas	T	T
	Peas		
	Onions		
T	Onions	T	T
	Onions		
	Onions		
	Onions		
	Onions		
T	Onions	T	T
	Onions		
	Onions		
	Onions		
	Onions		
T	Onions	T	T

## TOMATOES.

Date: May 10 to 25.

*Varieties:* Stone, Matchless, Ponderosa, Earliana. Other good varieties Acme, Trucker's Favorite, Coreless. It is usually cheaper to buy plants from a reliable seedsman, where only a few dozen are needed, Plants should be stocky, and six to ten inches high.

*Number of Plants:* To fill bed of "First Planting" will require 27 plants—see Plat on preceeding page. Order three dozen plants, and heel out the surplus for filling vacancies.

Water and shade for a few days. If frosts threaten, bend the plants down gently and cover with earth three inches deep. Uncover when danger of frost is over.

If plants are very long and slender, dig a trench three inches deep in any direction from where plant is to stand. Plant roots in trench, then bend down the stalk and cover with soil so that four inches of the top will come to the point where plant is to stand. It will take root where covered, and thus gain increased vigor.

When "First Planting" of vegetables are matured, remove and rake the soil mellow.

When plants are a foot high, set a stake six feet high, firmly by each plant, and as plant grows tie loosely to stake. Prune by removing slender, weak shoots. When plant reaches top of stake, top by pinching out terminal bud. Tomato plants are set where indicated by T in plan, "First Planting" is allowed to remain until matured.

# Special Cultural Directions.

## ASPARAGUS.

To grow asparagus successfully, the soil needs to be rich, light and deep.

Spade the bed as directed in the "Modified Sandwich" bed, only the soil should be stirred to a depth of full eighteen inches. Use old, well rotted manure, with an equal amount of sand.

Plant in rows lengthwise, and make three rows on a six foot bed: one in the middle, and one on each side, a foot from the edge.

The plants may be grown from seed, but if two-year-old plants are used, there will be a saving of at least two years time.

Most of nursery men and seedsmen sell Asparagus plants. Care must be taken that the roots do not become dry, or they are almost sure to die.

Procure plants about April 20, and plant quickly. Set one foot apart in row, and not less than eight inches deep, the tops or crowns about six inches below the surface.

Two dozen plants will supply a family. These will occupy a bed 6 x 8 feet, and will continue to produce for many years without replanting, but will need a generous top dressing of rich manure each fall after frosts. Also sow a pint of common salt, in autumn, to a bed of this size. No part of the garden is more profitable than the Asparagus bed.

Conover's Colossal, and Mammoth White are good varieties.

## BEANS, DWARF OR BUSH.—TENDER PODS.

These succeed admirably on Sandwich beds. All beans are very tender and should not be planted until the ground becomes warm. Begin planting early in May, and for succession plant every two weeks until middle of August. Plant in rows eighteen inches apart, and three inches in the row. Cover two inches deep.

Livingston's Hardy Wax, and Wardwell's Wax are good varieties. One quart will plant 100 feet of row.

For *green* pods, Stringless Refugee is excellent.

## BEANS,—POLE OR CLIMBING.—TENDER PODS.

These should be planted about two weeks later than Bush beans. Form hills three feet apart east and west, by four feet, north and south. Plant four beans in a hill, cover two inches deep, leaving space in center of hill for pole. Or plant two grains of sugar corn in each hill to support the vines.

One quart will plant 100 hills.

Kentucky Wonder for early; Old Homestead for main crop.



## LIMA BUSH.

These are grown same as other Bush beans, but should be planted ten days later. Plant in rows two feet apart, and three inches in the row. Press the seed into the ground with the eye downward, and cover two inches deep. Varieties, Foodhook, and Burpee's Improved.

## LIMA BEANS,—POLE OR CLIMBING.

Plant one week later than other Pole Beans, in hills three by four feet apart, and five beans to the hill. Press seed in soil, eye downward, and cover two inches. Set poles eight feet long, firmly, one to each hill, and bring upper ends of four together, tent fashion, and tie firmly. If poles cannot be had, slats will answer.

Climbing Limas are more productive than Bush, and are less liable to spoil in wet weather. Corn stalks will not support the great weight of climbing Limas.

Climbing Limas require a long season to mature, so do not defer planting too long or they will likely be caught by early frosts. Large White, and Dreer's Improved are good varieties. One quart will plant 75 hills.

## BEEETS.

Beets are semi-hardy, and may safely be planted quite early. The seed should be sprouted, but plant when the germ first shows. Plant in rows one foot apart and four inches in the row. They will usually need thinning, as a single seed often produces several plants. When thinning cut off half of the tops, and transplant in vacancies or new rows. These will mature a few days later.

For late pickling, plant seed about middle of May.

One ounce of seed will plant 75 feet of row.

Early Blood Turnip and Early Bassano are good varieties.

## CABBAGE—EARLY.

These do wonderfully well on plain Sandwich beds or on the "Modified" bed.

For extra early plants, sow seed in the Incubator flats in March, in rows four inches apart and two inches in the row, sprouting the seed first.

If the plants grow spindling, sift with hand fine sand between rows, until up to the seed, or primary leaves. This will insure fine stocky plants. Transplant to open ground as soon as ground is in good order, and when plants are five or six inches high. Set very deep, but do not cover the crown. If there comes severe cold weather, protect with several thicknesses of news paper. They will withstand considerable cold. For cabbage worm use Slug Shot. One ounce of seed produces about 2000 plants.

Early Jersey Wakefield and Glory of Enkhousen, are excellent varieties. Plant in rows eighteen inches apart each way.

### CABBAGE—LATE.

Sow seed about May 20 on Sandwich beds in open ground. Sprout the seed, water well with hose, and shade with screens for several days, but not too long or the plants will be spindling. For cabbage fly sprinkle with powdered tobacco leaves, *before* the plants are destroyed. Transplant about June 15 to rows two feet apart and 18 inches in row. Set deep and when well established hill up around the plant slightly.

American Savoy and Late Flat Dutch are good varieties.

### CARROT—EARLY.

Long rooted plants do best on the Modified bed. Sow seed where they are to grow, early in Spring, in rows 18 inches apart, and four inches in row. Cover half an inch deep. One ounce will sow 100 feet of row.

Early Danvers and Chantenay are good varieties. Sprout the seed before planting.

For late Carrots sow seed in May or first half of June.

### CAULIFLOWER.

Cauliflower is in its nature, very similar to Cabbage, and can easily be grown to perfection on Sandwich beds. Sow seeds in flats in incubator in February or March after sprouting the seeds. Plant in rows three inches apart and two inches in row. Cover one fourth inch. Treat like cabbage plants. Transplant to open ground April first to fifteenth, and set rather deep, in rows eighteen inches apart both ways. Henderson's Early Snow-ball seems to be the favorite variety, and is really one of the very best.

Seed is usually high in price. One-fourth of an ounce will produce 500 plants.

For late crops sow seed about middle of May in rich soil, or on Sandwich bed, and transplant like late Cabbage. When plants are of suitable size, if weather is very warm, shade for few days till plants are established. Cauliflower like cabbage, needs frequent watering. Use same variety for late crop.

### CELERY.

This desirable vegetable is somewhat difficult and troublesome to grow by old methods. By the plan here outlined, gratifying success is, relatively, easy of achievement. Indeed the Sandwich beds are perfectly ideal for Celery growing.

The author has been able to produce, with uniformity, from 1000 to 1500 choice heads of fancy, high flavored Celery for each square rod of Sandwich bed.

Sow seed in March or first of April, in flats, after first sprouting the seeds which are very small and usually germinate very slowly. In flats with the Incubator much time is gained. Sow in rows three inches apart, and about one quarter of an inch apart in rows. As many seeds will fail to germinate a little thicker sowing will insure a good stand. When plants are two inches high, pull up and transplant in flats, two inches apart, in rows which are three inches apart. Water well, and shade for a few days.

About first to middle of May, or any time even a month later, plant in open ground in Sandwich beds, setting the plants exactly five inches each way.

In transplanting be careful to have the plants of uniform size, or the smaller and weaker ones will be crowded out by their more sturdy neighbors. Trim off at least one-third of roots and tops, and dip roots in "puddle" before setting.

"Puddle" is a thin mixture of clay and water, and should be about the consistency of cream.

Press soil very firmly about roots, then water copiously, and shade with muslin screens for a few days. If any plants fail to grow, put in fresh ones, so there are no vacancies.

Water *frequently* and somewhat copiously. This is best done in the evening.

To stimulate growth, apply in dry state, Nitrate of Soda, by sifting the Pulverized crystals, with the hand, *between* the rows, but be careful to keep it off the foliage. Use a heaping teaspoonful to one hundred plants, and repeat about twice, at intervals of ten days.

When plants are eight to ten inches high, do most of the watering by permitting the hose to lie on the ground between rows, as too much water on the foliage may induce rust.

In about six weeks from last transplanting, blanching may begin.

Take cheap, one-ply roofing felt, such as Flint Kote, or similar material, and cut in pieces 16 inches by 12 inches. Bend in cylinders which should be about 5 inches in diameter, and 12 inches long. With small tacks fasten the edges together, lapping one inch. The tacks will hold better if there is an inch strip of the same material on the inside of the cylinder, where the lap is tacked. Use a two foot piece of two-inch gas pipe as a anvil, on which to nail, fastening one end firmly in a vice. Now first lay the strip on the gas pipe, then place the lap directly over this strip, the cylinder encircling the pipe, and drive tacks through the three thicknesses, and clinch on gas pipe. Use about six tacks to each cylinder.



Blanching Celery with Tubes.

Next have your tinner make an "Enfolder" of light, galvanized sheet iron, No. 29 as follows:-

Bend two strips of sheet-iron in form of half cylinders, so that when placed with concave sides towards each other they will form a complete cylinder. The proper size of strips is  $5\frac{1}{4}$  inches wide, and eighteen inches



long. These will form a tube in two parts,  $3\frac{1}{2}$  inches in diameter. Attach light hinges by riveting them *inside* of the half tubes, in such way that the two halves can be easily opened or closed.

For use, gather the leaves and stems of the celery in left hand, then with open cylinder in right hand, press the open face close against the plant, and as it is closed encircle the plant. Now drop the blanching tube over enfolding cylinder and all, and then withdraw the enfolding cylinder—and the plant is snugly placed *within* the blanching cylinder.'

It is easily and quickly done.

The blanching will usually require about 8 to 12 days, when the celery is ready for the table, or it may be allowed to remain in the tubes until wanted.

If weather is hot when blanching, place muslin screens, supported by stakes, about three feet above the ground, where blanchers are being used; otherwise sometimes there will be sun-scald.

After putting on blanching tubes, water only by allowing the nozzle of hose to lie on the ground. Do not spray *over* the celery while in tubes, though rain will do no harm.

Common drain tile will answer for tubing, but they are very heavy, costly, and liable to breakage.

When tubes are made of roofing they may be made in two sections, telescoping together. The advantages of this form however does not pay for extra cost and trouble.

About twenty-four tubes, or even a less number, will answer all purposes, as they are moved further along, and used again and again, as celery is cut for use.

Light frosts do not hurt celery, but hard freezing will destroy it.

It may be removed to cellar, if taken up with some soil adhering, and packed, not too closely, in upright position, in boxes, but do not wet the foliage or stems after removal, or they will surely rot.

If only a few hundred heads are needed, it is usually cheaper to buy the plants of a reliable dealer, than to grow them yourself. Order plants about June 10. It is desirable to have a few extra plants to fill vacancies.

Golden Self Blanching is a very satisfactory variety. A single packet of seeds will produce a surprising number of plants.

Celery is usually grown as second crop, after Peas, Lettuce, Radishes, Onion Sets, when used green, etc. It may even follow early potatoes, or

Early Sugar Corn, but should not be transplanted later than July 1st.

Fine, fresh, crisp Celery is certainly a luxury, and well worth the trouble of growing.

### CUCUMBER.

Cucumbers may be very successfully grown by the "Post Hole" method given elsewhere, and treatment is exactly the same as Cantaloupes, except that the use of lime and sulphur is unnecessary.

Water freely and gather the fruits daily, if needed for pickling. Do not permit the fruits to ripen on the vines, or they will cease bearing. Cucumbers and Cantaloupes do not "mix," even when grown side by side.

White Spine and Green Prolific are good varieties.

### EGG PLANTS.

Sprout the seed and plant in flats in March. Transplant to open ground last of May, setting plants pretty deep and firm. When well established hill up earth around the plants and press firm. Pick off the Potato beetles by hand, or dust the plants with White Hellebore or Paris Green.

One dozen plants will supply a family. Water freely for best results.

Varieties: Black Beauty, Mammoth Purple.

### ENDIVE.

Sow seed after sprouting, about middle of April, and when of sufficient size, transplant to rows 12 inches apart each way.

It may be blanched like celery in tubes, but requires somewhat larger tubes.

Nothing can be finer than Endive when grown on Sandwich beds, and blanched in this way.

If blanching is done in very hot weather, shade with muslin screens on stakes two feet high.

White Curled and Green Curled are fine varieties.

### KOHL RABI.

Sow seed in March in flats, after sprouting. Transplant in rows 10 inches apart each way, as soon as plants are of suitable size.

They are much like cabbage in their nature, and are managed in similar manner.

They must be used before full grown, as they will become tough with age.

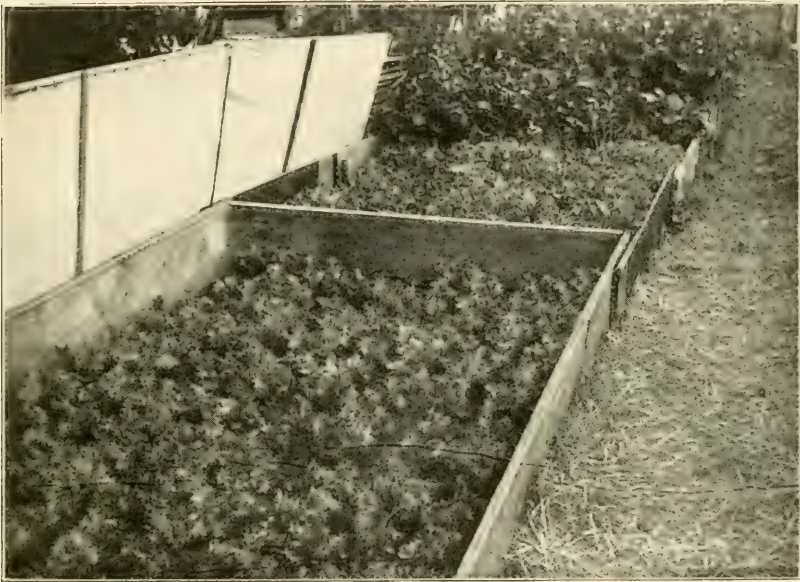
Early White Vienna is a good variety.

## LETTUCE.

Lettuce is of two kinds; those which grow loosely, and those which form heads.

For early, sow seeds in flats in March, and keep in Incubator until about two inches high, when they may be transplanted to open Sandwich beds, setting plants six inches apart each way. Or the seed may be sown out of doors at time of "First Planting." Rows six inches apart, and not closer than two inches in the row.

For early use, cut *all* of alternate rows. This will give remainder plenty of room.



Grand Rapids Lettuce—Radishes and Peas in Back-ground.

In hot days shade with muslin screens raised one foot above top of plants.

For succession, sow every three weeks until middle of July. The later sowings must be shaded to secure fine, crisp quality.

Loose Varieties: Grand Rapids, Black Seeded Simpson.

Head Varieties: Big Boston, Crisp-as-Ice.

Trianon Cos, or Celery lettuce, may be blanched like Celery, when it is very fine.

All kinds are easily transplanted.

## MELON—WATER.

(For *Musk Melon*, see "*Cantaloupes*" in "*Post Hole Hills*.")

Water melons should receive precisely the same treatment as musk Melons, except that lime and sulphur are not needed. In preparing Post Hole Hills do not forget that Water Melons delight in plenty of *sand*.

Varieties. Water Melons, Georgia Rattle-Snake, and Sweetheart. Musk Melons, Ohio Sugar, Tip Top, Miller's Cream.

## OKRA, OR GUMBO.

Plant seeds about middle of May, in rows 18 inches apart, and four inches in row. When plants are three inches high, thin to one foot apart.

White Velvet is an excellent variety.

The pods must be used when small, while tender.

For succession make two plantings, three weeks apart.

## ONION SETS.

Secure "sets" or bulblets about first of March, and for extra early green "pulls", start the bulbs in a box of sand. Put in a layer of sand, then a layer of bulbs, and cover with sand. Kept in a rather cool, dark place, where they will soon form rootlets, when they are ready to plant. Rows may be six inches apart. Set the bulbs, right end up, or they will be crooked, and not more than two inches apart in rows. Plant them at least two or three inches below the surface.

When large enough to pull, remove two, and leave one, and remove *all* of alternate rows: the remainder may be allowed to mature for winters use.

Select bulbs for planting about size of end of small finger. If much smaller they are lacking in vigor, and are tedious to plant. If much larger they are apt to throw up seed stems.

Bulbs are White, Red, and Yellow. The White are generally preferred.

Egyptian or Winter Onions, are set in September, when they will furnish green "pulls" very early the following Spring. They are perfectly hardy.

## POTATOES.

Potatoes will do moderately well under almost any conditions, but for very best results, both in quality and yield, use the Modified Sandwich bed.

I find it a very great advantage to start the seed potatoes before planting,



by first cutting the potatoes in halves, and covering with sand or Compost in a flat, placing them in a moderately warm room, not necessarily in the light, and thus permitting them to form roots, and start sprouts from the eyes, to a length of about half an inch before planting.

When thus treated they make a very vigorous growth and may be planted about middle of April or even later, and thus avoid having the tops frosted, as often happens if planted very early. Frosted tops always lessen the yield.

This way of starting the seed insures earliness in any event, and helps to avoid severe frosts.

At least two weeks are gained by this method. Cut and sprout seed about March 25 to April 1st. Plant out of doors April 12 to 20th.

Plant one piece in a hill, about 12 inches apart each way. Cover fully four inches deep, and be careful not to break off sprouts or roots.

Select medium sized potatoes. One peck will plant 100 hills.

Early Ohio is a very satisfactory variety. After planting is completed, cover the entire bed with stable litter, at least three inches deep.

When plants appear, pull out weaker ones, leaving but two stems to the hill. This thinning is absolutely necessary to complete success.

Treated as above described, the author has grown, on a space 6 x 20 feet, seven measured pecks of choice potatoes.

## PEAS.

The common belief that peas will do best on thin, poor soil, is not correct. They yield wonderfully well on Sandwich beds, for early varieties, and on the Modified Sandwich beds for late.

It pays to sprout the seed before planting: the "stand" is more even, and several days time is gained.

Early sowings should be covered about one inch, but later sowings may be covered two inches.

Plant in rows one foot apart and quite thickly in the row, say one seed to two inches, for not all of the seed will grow.

After planting two rows, 12 inches apart, it is best to leave a space of three feet, then two more rows more, and so on. The vacant space may be sown in radishes, lettuce, beets, or filled with onion sets.

For *very* early, choose Early Alaska, which is a smooth variety. Little Gem is a dwarf, wrinkled variety, and is also early. These require no brush.

Gradus is a splendid variety, and is 2nd early. Telephone is fine for main crop. The last two require brush about two feet high, one to each foot of row. For succession plant every three weeks but not later than middle of June. Sometimes later planting will do well, but not often.

### PARSLEY.

Seeds of this plant germinate very slowly.

Sprout, and sow in flats, and keep in Warm Incubator until plants come up. This may be done in March or April.

Transplant in rows one foot apart, and four inches apart in row.

Moss Curled is an excellent variety.

### PARSNIPS.

Sow on "Modified" Sandwich beds as early in Spring as weather will permit, first sprouting the seed. They germinate very slowly.

Plant seeds in rows 18 inches apart: 4 inches apart in row. Cover half an inch deep.

They improve by frost, and may be left in ground where grown until Spring.

For Winter use take up in late fall, and store in sand in boxes in cellar.

Hollow Crown is an excellent variety.

### PEPPERS.

Plant seeds in flats and place in Incubator in March or April. Transplant last of May or first of June, 2½ feet apart each way.

Chinese Giant, and Ruby King are good varieties.

### PUMPKIN.

Same treatment as Water Melon. For squash bug, dust vines with powdered tobacco leaves.

Winter Luxury is a good variety.

For "Jumbo" pumpkins, try True Pot Iron, often of gigantic size, weighing as much as 200 lbs.

If extra large size is wanted, pinch off all but one specimen, and give occasional watering. If rich earth is placed on the vines in several places, roots will form, and give the plant increased vigor.

## RADISH.

The radish thrives exceedingly well on common Sandwich beds. There should be plenty of sand in top layer of compost.

Sprout the seeds, and sow at intervals of three weeks, from March till September.

If Gypsum or Land Plaster is sown over the beds before planting, a quart to the square yard, the quality will be greatly improved. Mix by raking the soil.

For winter radishes, sow about June 1st. Succession may be had by sowing all kinds mixed, but the later ones will lack in crispness.

Sow Radishes in rows 12 inches apart, and *not closer than 3 inches* in the row, Cover one inch deep.

Icele, Scarlet Turnip, and Scarlet White Tip, are excellent varieties.

To be good, radishes should grow quickly, and great care must be taken to avoid thick seeding.

## RHUBARB OR PIE PLANT.

Make a Post Hole Hill, only the hole should be wider. Procure in early Spring divided roots, and set one in each hill, and pack rich soil closely and give a good watering.

Do not pull stems the first season. Never permit the flowering stems to remain, or the plant will be greatly weakened. Pull them out as soon as they appear. Give additional manure each fall. The ground cannot be made too rich.

If one-year seedling roots can be had, they are much better than divided old roots.

## SALSIFY, OR OYSTER PLANT.

Salsify does best on "Modified" Sandwich beds. Sprout the seed same as Parsnips. Sow early in April in rows 18 inches apart, and 3 inches in row. Cover one inch.

Salsify may be dug as used, or it may be left in the ground all winter. Light freezing rather improves it.

For Winter's use dig and store in sand in box in cellar.

Mammoth Sandwich Island is a fine variety.

## SPINACH.

Sprout the seed, and sow in hills or rows 12 inches apart, and about 3 inches apart in row. Cover one inch. Sow at intervals of three weeks for succession.

When weather gets warm, shade with screens supported on stakes two feet high.

---



Hill of Golden Bantam Corn.



## SUGAR CORN.

Plant all kinds of Sugar Corn in rows four feet apart and about 8 inches apart in rows. But first sprout the seeds, and reject any that do not start vigorous growth. Cover two inches deep

It is useless to plant before the ground is warm, for seed will rot, but if seed is carefully sprouted they may be planted a week earlier on *Sandwich beds* than on ordinary soil. By this plan ten days time is gained over other methods.

Corn may be grown with Early Ohio potatoes, as shown in third "Group Planting". This plan is designed where the available area is very limited. If there is room, separate planting is recommended.

For succession plant every three weeks till July.

Golden Bantam for early: Country Gentleman for late.

## SQUASH.

Squashes require same treatment as Water Melons, For Squash Bug use white Hellebore. For striped bug use powdered tobacco leaves a handful to the hill, scattered directly over the small plants just as they emerge from the soil.

Sow ten or twelve seeds to the hill, and after danger is over, thin to two strong plants to the hill. Cover two inches, and firm the soil slightly. If Squash Bugs become numerous and destructive, pick by hand, and drop them into a pan into which there is a little coal oil. If left undisturbed they will quickly ruin the crop.

For winter's use pull before frosts, and store in a cool room where it does not freeze.

Delicata and Banana are superior varieties.

## SWISS CHARD.

This unique vegetable deserves more attention than it usually receives. It belongs to the Beet family, but the stems and leaves are used and not the root.

Stems may be used like Asparagus, or leaves and stems may be prepared like Spinach. They are excellent either way.

Sprout the seed, and sow in rows 18 inches apart, and 12 inches apart in the row.

Give plenty of water.

Pull the leaves freely: the more you use, the faster they are renewed. A few plants will supply a family.

There is but one variety—Lucullus.

It transplants easily, so vacancies can readily be filled.



Swiss Chard Lucullus.

## TOMATOES.

Of all the vegetables grown in the garden, the Tomato is easily King!

Sow seed, after sprouting, March 1st in flats, and keep in the Plant Incubator. The seed germinates very slowly, usually requiring three weeks to "come up" when sown under ordinary conditions. In the Incubator it requires but half as long. In flats, the rows are 3 inches apart, and seeds are placed one inch apart in row.

When plants are two or three inches high, pull out all of each alternate row, and every other plant in remaining rows. This will give remaining plants plenty of room. Otherwise they will become spindling.

The plants thus pulled should be carefully transplanted to fresh flats, in

rows three inches apart each way. In transplanting set very deep, and shade for a few days. Water frequently, but not too much at a time, or they may rot or blight.

When plants are ready to set in open ground, proceed in manner described on page 32 in "Succession to First Planting", which see.

For training to stakes proceed as follows:

When plants are one foot high, prepare for staking. Use a stout stake four and one-half feet long, sharpened at one end. Drive this firmly into the ground about 18 inches deep. A hole may be made with a crow-bar to receive the stake.

To this stake wire a slat or pole eight feet long, by twisting a number 12 wire firmly around both slat and stake, near the ground, and another around both, near top of stake. This is much easier than to try to drive a long stake.



Tomato Vines Ten Feet High—Five Bushels on Place 6 x 12 Feet.

For tying, use strips of muslin about an inch wide and thirty inches long. Double the strips, pass the closed end around the stake, pass the loose ends through, forming a slip loop around the stake. Pull tight and then tie the plant with the loose ends. Tied this way the string will not slip. Tie at in-

tervals of a foot until the top of stake is reached. Thin out surplus laterals, but do not destroy the fruit branches.

When plants are two feet high, mulch with straw, leaves, or litter, about six inches deep.

The earliness of tomatoes depends more upon the age and vigor of the plant, than the special variety, though Earliana has some advantages in earliness of ripening.

Growth and ripening can be considerably accelerated by the application of Nitrate of Soda, a teaspoonful to the plant, scattered on top of the ground around the plant before mulching. Repeat in ten days.

By methods here described the author has grown tomato vines ten and one-half feet high. The yield on 18 plants being five and one-half measured bushels of superb fruit. See engraving.

## TURNIPS.

Turnips may be sown in April and May, but rarely do well. For late, sow in August or early half of September. Sow in rows twelve inches apart, and ten seeds to the foot. When well started, thin carefully to six inches. Neglect of thinning will spoil the crop.

After sowing the seed, the ground should be tramped firm, and then given a good soaking. If shaded with muslin screens for a few days, a better stand is often secured. Turnips may be used to fill vacant places made by removal of other crops.





# Succession.

These may be planted for succession at any time  
between dates named.

---

## SEEDS.

Lettuce,.....	April to August.
Radishes, . . . . .	April to September.
Beets,.....	April to August,
Sugar Corn,.....	May to July.
Beans, .....	May to August.
Cucumbers,.....	May to July.
Endive, .....	April to August.
Peas, . . . . .	April to July.
Potatoes, .....	April to June.
Spinach,.....	April to September.
Turnips, .....	April to August.

## PLANTS.

Cabbage, .....	April to July.
Celery,.....	April to July.
Peppers,.....	May to July.
Tomatoes,.....	May to July.
Kohl Rabi, .....	April to August.
Cauliflower,.....	April to August.
For <i>late</i> planting choose <i>Early</i> varieties.	

## TRANSPLANTING TABLE.

### Readily Transplanted.

Asparagus  
Beets  
Cabbage  
Cauliflower  
Chard  
Celery  
Egg Plant  
Endive  
Kohl Rabi  
Lettuce  
Onions (from seedlings)  
Parsley  
Pepper  
Tomato

### Difficult to Transplant. Best to sow seed where wanted.

Beans  
Carrot  
Corn  
\*Cucumber  
\*Mellon, Water  
\*Mellon, Musk  
Parsnips  
Peas  
Pumpkins  
Radish  
Salsify  
\*Squash  
Turnips  
Okra

\*These may be started in pots and with care may be transplanted to open ground.

---

Seeds of the following are usually sown in hotbeds for setting out in garden as soon as weather and soil permit. Can be started in Incubator.

If only a few plants are needed it is cheaper to purchase of a reliable seedsman or plant grower than to attempt to grow them:

#### VEGETABLES

Early Cabbage  
Early Cauliflower  
Egg Plant  
Endive  
Kohl Rabbi  
Lettuce  
Onion (seed)  
Pepper  
Tomato  
Beets  
Chard

#### FLOWERS

Asters  
Balsams  
Cannas  
Carnations  
Coxcomb  
Cosmos  
Dahlia  
Dianthus  
Ricinus  
Salvia

#### FLOWERS

Stocks  
Verbena  
Pansy  
Heliotrope  
Marigold  
Phlox  
Larkspur  
Moonflower  
Zinnias, Etc.

## CULTIVATION.

The Sandwich System does not require that the plants receive much hoeing or other cultivation. Usually a little stirring of the surface soil, and the pulling out of weeds is about all that will be necessary.

A very narrow hoe should be provided. The Author had such an implement made by his blacksmith, at a cost of fifty cents, which gives excellent results.

The blade was made of tool steel, about width of a butcher-knife, only it was bent into a curve like the letter "J", the lower end pointed, and with both edges made sharp. A light handle was purchased at hardware store.

## FERTILIZERS.

If additional fertilizers are needed the following will be found excellent for the purpose.

*Nitrate of Soda:* One fourth pound to the square rod

Apply after plants are above ground, being very careful to keep it off the leaves.

Pulverize and apply before watering. Repeat at intervals of two weeks. This will give quick and rapid growth.

Costs about 5 cents per pound.

*Raw Bone Meal:* Apply broadcast, and rake in soil before planting, one pound to square rod.

Costs about 3 cents per pound.

*Wood Ashes:* Apply broadcast before planting, and rake in soil, two pounds (two quarts) per square rod.

## WATERING.

Of course, by the Sandwich Method of Gardening, success can only be attained by the supply of plenty of water, for otherwise the plants will soon perish. Most cities and towns, and even villages, now have water-works, and the supply is constant and ample.

Watering should be done in the evening, if best results are to be obtained, and it is much better to water profusely once or twice a week than to give a light sprinkling oftener. In very dry, hot and windy weather it may be necessary to water every other day.

Some plants require much more water than others, notably, Celery, Spinach, Cauliflower, Lettuce and Radishes. Peas and Beans require less,

but should not be allowed to languish for lack of water. Celery especially wants plenty of moisture, but it is usually best to allow the water to soak into the ground without permitting the leaves or foilage to become wet, because if the latter is kept wet, rust and blight may ensue. This is especially true when the plants get to be six inches high or larger. At this stage of growth, water the roots only. This can be done by laying the hose on the ground in the middle of the bed, and permitting a light flow. Let this continue until the ground in the bed is thoroughly soaked.

Most plants are better off if the water is sprayed directly on and over them. Sometimes, in very hot weather, Lettuce and Endive will rot if too much water is supplied.

For Cantaloupes, Squashes, Cucumbers, Watermelons and Pumpkins, water in the manner described in the chapter on Cantaloupes, but stop watering as time of ripening approaches.

All these plants are better for a liberal supply of water at intervals of a week or so; especially is this true of Cucumbers. When grown by the Post-Hole Method, and liberally watered, their productiveness is marvelous.





## DATES FOR PLANTING IN THE SOUTH.

The dates here given are for latitude of Jacksonville, Fla., Mobile, Ala., New Orleans, La., and San Antonio, Texas. For points one hundred miles north the dates should be ten days *earlier* in Autumn, and about same length of time *later* in Spring, for each one-hundred miles. Allowance should also be made for difference in local conditions.

Artichoke, Seed . . . . .	February.
Artichoke, Suckers . . . . .	November.
Asparagus, Seed . . . . .	February.
Asparagus, Roots . . . . .	March.
Beans, Tender Pods . . . . .	March to May.
Beans, Lima . . . . .	April to May.
Beets, . . . . .	January to April; July to November.
Chard . . . . .	January to April.
Brussels Sprouts . . . . .	August to September.
Borecole . . . . .	February to March.
Cabbage . . . . .	July to September: January and February.
Cauliflower . . . . .	April to September.
Celery . . . . .	May and June: August and September.
Sugar Corn . . . . .	February to June.
Cucumber . . . . .	March to July . . .
Egg Plant . . . . .	January.
Endive . . . . .	March to May: September and October.
Garlic . . . . .	October and November.
Kohl Rabi . . . . .	January and February: July to October.
Lettuce . . . . .	January to April; September to December.
Melon, both kinds . . . . .	March and April.
Okra . . . . .	March and April.
Onion, Seeds and Sets . . . . .	January and February.
Shallots, Sets . . . . .	November.

## DATES FOR PLANTING IN THE SOUTH—CONCLUDED

Parsley.....	November, February: June and July.
Parsnips and Carrots.....	January to March.
Peas, Tom Thumb.....	August and September.
Peas, Marrowfat.....	January and February.
Peppers.....	January.
Potatoes, Irish.....	January to March (Feb. 1st is best date.)
Potatoes, Sweet.....	April and May.
Radish.....	The whole year.
Salsify.....	October.
Spinach.....	September and March.
Squash.....	March to June.
Tomato.....	January to March: May to June.
Turnips.....	January, to March: July to October.

---

The Author's personal experience in gardening in the South proves that the Sandwich Beds are admirably adapted to that region, for excellent crops were grown regardless of adobe, alkali, sand, or other unfavorable conditions.

The Double Muslin Screens are just what is needed to protect tender, succulent plants in this land of Sunshine. By use of this means of protection, the finest grades of Celery, Lettuce, Spinach, Radishes, etc., can be produced with certainty.

Other cultural directions are similiar to those found in the body of the book.

## STRAWBERRIES.

This fine fruit is usually grown on large areas, but can be produced in abundance, and of the finest flavor, on very limited spaces.

The difference in flavor is very much in favor of the home grown article. This is particularly true where berries are necessarily picked before fully ripened, and shipped to distant markets.

For finest flavor and highest excellence, Strawberries should be gathered when fully ripe, preferably in the cool of the morning, with a trace of dew upon them!

The Modified Sandwich beds are exactly adapted to producing this delicious fruit in its greatest perfection. A space 6 x 12 feet will usually produce enough for a small family, both for dessert and jam, but a bed twice that size, 6 x 24 feet, will afford enough in addition for gifts to appreciative friends, and few articles give the supreme satisfaction that a dish of large, showy, delicious Strawberries is capable of inspiring.

It may be that the owner of a small plot in the back-yard, while wishing to grow something nice, yet has not spare time to attempt many vegetables; to such Strawberry growing, even on a very limited scale, certainly offers peculiar attractions, for after the beds are constructed and carefully planted, they need very little attention.

An occasional hoeing, and pulling of grass and weeds, will be about all that is needed.

The planting should be done in latitude of Columbus, O., as early as April. In fact the plants should be set as soon as other "First Planting" is done, though good success may be often secured by planting as late as May 10th.

Spring planting is usually much more successful than fall planting, in this latitude.

In latitude of New Orleans, San Antonio, etc., planting may be done any time from November to February.

The beds should be six feet wide, and of any suitable length. In making up the Compost, add another part of sand, that is, the Compost may be as follows: One part rich soil, one part fine stable manure—that from cow stables preferred—and two parts fine river sand.

First spade the ground, filling the trenches with fine manure as each line of spading advances, as described in Modified Sandwich beds. Spread

about three inches of Compost, as above described, evenly over the beds, and make tolerably firm by tramping; rake smooth, and it is ready for planting.

When plants are received, remove all but three young, fresh leaves; dip the roots in "puddle," which is a mixture of clay and water, about consistency of cream. Allow the roots to remain in puddle until planted; that is, do not drop them ahead of planter, for the roots will soon suffer, if exposed to drying air.

In planting, first make a hole about five inches in diameter, and three or four inches deep. In bottom of hole make, with the hand, a small conical mound, say three inches in diameter, and two inches high. Set the center of the plant directly over the center of the conical hill, spread the roots evenly and smoothly, in all directions, down the sides, and then, carefully draw fine compost over the roots, filling up the hole till the ground is level. To prevent soil covering the heart of the plant, gather the leaves in left hand, until planting is completed.

After filling in the soil, press down *very firmly*, placing toe of shoe on each side of plant, close up, and then pressing with full weight.

When planting is properly done, the plant will be a little below the level, and set so firmly that it cannot be pulled out by drawing on a single leaf.

After setting, pour a quart of water over and closely around each plant, and then shade with muslin screens for three or four days. Water again when screens are removed.

In ordering plants be sure to get a few extra plants of each variety. These may be planted temporarily, and used later to fill vacancies.

Michael's Early, Rubach, Gandy, and Aroma are fine varieties, and give a long season of ripening.

If other varieties are substituted, be sure that at least two varieties, out of five, are staminate flowered. The pistilate varieties are among the best bearers, if they are properly pollenized by staminate varieties planted near by, otherwise they will not be productive.

Plants set in manner here described will cover the ground the first season, and bear abundantly the following spring. In the North a light protection of leaves, or stable litter, will protect them from winter kill. But the covering must not be very thick, or they will often blanch and rot. Put on barely enough cover to conceal the plants; a little less will be better. The mulch or covering need not be removed in spring.

For stimulating growth, use Nitrate of Soda, a pint to a bed twenty-four feet in length (six feet wide). Apply the finely pulverized crystals by



hand, broadcast, by sifting *between* plants, being very careful to keep the Nitrate off the foliage of the plants. This should be applied early in spring, and repeated two or three weeks later.

After fruit is all ripened, the bed can be made productive for second year, in the following manner:

With a sharp hoe cut off, close to the ground, all the plants on a strip 18 inches wide, leaving alternate strips of plants of same width. These strips thus destroyed should be where the old plants stood, leaving young plants for next crop. Then with narrow hoe, thin the strips remaining, leaving a vigorous plant not nearer its neighbor than six inches. Then with a spading-fork loosen the soil between rows, and around plants. Water well, and a vigorous growth of young, healthy plants will soon cover the entire bed. If they become matted, it will pay to pull out the weaker plants, otherwise the berries will be smaller, and of poorer flavor.

Nitrate of Soda may be used second season, applied in same manner as directed for first crop.

After two crops, the bed should be changed to new location, planting a new patch the second spring.

Or a new plantation may be made *every Spring*, destroying the plants after first crop is gathered.

Treated in this manner, one-hundred plants should produce from two to three bushels or more of highest grade of delicious fruit. Between time of blossoming and ripening of fruit, they should be watered at least every other evening, rather copiously, reducing the quantity of water as ripening approaches.

On Alkaline soils, or on Adobe, it is better to use the regular Sandwich bed, for on these beds, properly constructed, good crops can be grown, even where ordinary methods fail.

Plants may be set in rows, eighteen inches apart, beginning nine inches from the side, thus planting four rows on a bed six feet wide. In rows, twelve inches apart.

A bed 6 x 24 feet will require 96 plants. Better order 125.

When plants arrive they should be planted without delay. This is important.

The estimated yield here given is very conservative. The author has been able to grow more than double this quantity.

## FLOWERS.

The Modified Sandwich Beds are exceedingly well adapted to nearly all kinds of flowering plants, with the possible exception of the Nasturtium, which does best on rather poor soils. On Sandwich Beds the growth is too rampant.

Sweet Peas should be planted very early. In the North about last of March, in South in December and January.

Plant at least six inches deep, and rather thinly in the rows, say six inches apart.

Provide wire screen, four feet wide, for support. Water somewhat profusely, and be sure to cut the flowers every day. If pods form, blooming will cease, or the blooms will be smaller.

The rows should not be nearer than three feet apart.

Buy seed from reliable seedmen, and ask him to select varieties.

## CHRYSANTHEMUMS.

Buy the plants from your Florist, and ask him to select good, standard varieties. Give them room. They should not be less than thirty inches apart each way.

If extra large and fine blooms are desired, prune severely, and "debud" or pinch out, when small, all but a few buds, or better yet, leave but one bloom to each stem.

A small application of Nitrate of Soda will stimulate vigorous growth. They also require considerable moisture.

The larger and finer varieties are somewhat tender, and will be damaged by freezing. When cool weather approaches, the plants can be taken up, and removed to shelter, by lifting the plant with a good clump of earth adhering to the roots. Place in large pot, or box about one foot square. Pack around the roots firmly, enough soil to fill to within two inches of top of box, water well, and set in shade for several days. They will continue to bloom till holidays, if kept in sunny place and not allowed to freeze.

## DAHLIAS.

Buy *plants* rather than *tubers*, Seeds sown early, in Incubator, and later transplanted, will give a great variety of blossoms the first season. But if fine, large blooms are wanted, buy plants of named varieties, and here also standard varieties will give satisfaction. Plant out of doors as soon as danger of frosts is well over. They need room, and should be at least three feet

apart each way. Prune where too many branches appear. Plant a stout stake at least four feet high, near each plant, and to this tie plant securely, at intervals of one foot, otherwise they will straggle to the ground, and do but little good.

Use a little Nitrate of Soda about the roots, and water well throughout the season, for best results.

The author has grown blooms full nine inches in diameter, by method here given.

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# INDEX.

Asparagus	34
Beans, Tender Pods	34
Beans, Lima	35
Beets	35
Board Frames	13
Cabbage, Early	35
Cabbage, Late	36
Carrots	36
Cauliflower	36
Celery	37
Cucumber	40
Cultural Directions	34
Cultivation	53
Dates, etc., for planting in the South	55-56
Diagram of arrangement of varieties	18
Diagram of first group of planting	24
Diagram of Second group planting	26
Diagram of Third group planting	28
Diagram of Fourth group planting	30
Directions	33
Directions for making Sandwich beds	11
Egg Plant	40
Endive	40
Fertilizers	53
Flowers	6-60
Group Planting	14
Hot Bed Plants	52
Introduction	3



Kohl Rabbi . . . . .	40
Lettuce . . . . .	41
Melon, Water . . . . .	42
Melon, Musk or Cantaloupes . . . . .	20
Muslin Screens . . . . .	13
Okra, or Gumbo . . . . .	42
Onions . . . . .	42
Parsley . . . . .	44
Parsnips . . . . .	44
Peas, . . . . .	43
Peppers . . . . .	44
Planting Directions . . . . .	25
Planting Directions . . . . .	27
Planting Directions . . . . .	29
Planting Directions . . . . .	31
Post Hole Method for Melons, etc. . . . .	20
Potatoes . . . . .	42
Preparation of hills . . . . .	21
Pumpkin . . . . .	44
Quick Germination . . . . .	14
Radish . . . . .	45
Reference table for sowing, etc. . . . .	5
Rhubarb, or Pie Plant . . . . .	45
Salsify, or Oyster Plant . . . . .	45
Space and production . . . . .	7
Sprouting Seeds . . . . .	19
Spinach . . . . .	46
Squash . . . . .	47
Strawberry Growing . . . . .	57

Succession to First Planting.....	32
Succession Table.....	51
Sugar Corn.....	47
Swiss Chard.....	47
Tomatoes.....	32-48
Tools and appliances.....	12
Transplanting Table.....	52
Turnip.....	50
The boy gardener.....	8
The Modified Sandwich bed.....	12
The Plant Incubator.....	15
The Sandwich System.....	10
Watering.....	53





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